

Claims

I claim:

1. A self-centering ball-and-socket joint, comprising:
 - (a) a spherical pin (01), with a first end rotably coupled to first (03) and
5 second (02) bearings ,
 - (b) said first end comprised of first (09) and second (10) hemispheres, said
first hemisphere (09) having a larger diameter than said second
hemisphere (10),
 - (c) said first (03) and second (02) bearings being mounted inside a case (04),
10 said case (04) having a connection system,
 - (d) said spherical pin (01), having a second end extending out of said case
(04), said second end having a connection system.
2. The joint of claim 1, wherein said first end of said spherical pin (01) interacts
with said bearing assembly (02, 03) to restrict motion in a first pre-determined
15 direction, and to allow free rotary motion in a second pre-determined
direction.
3. The joint of claim 1, wherein said first hemisphere (09) is coupled with said
first bearing (03), said first bearing (03) having an arcuate shape, and said
second hemisphere (10) being coupled with said second bearing (02).
- 20 4. The joint of claim 1, wherein restricted angular movement of said second end
of said shear pin (01) occurs as a result of the said second bearing (02)
interaction with said second hemisphere (10), said second bearing (02) being
comprised of an elastic material.

5. The joint of claim 1, wherein the said second bearing (02) includes holes (11), adjacent to a lower sealing cover (05).
6. The joint of claim 5, wherein said holes (11) decrease in depth from said second bearing's (02) outer circumference, to said second bearing's (11) centerline.
7. The joint of claim 5, wherein said lower bearing (02) creates a spring effect that urges said spherical pin (01) back to a predetermined position.
8. The joint of claim 1, wherein said first hemisphere (09), and said second hemisphere (10) form a single unitary part, created from a single piece of material.
9. A self-centering ball-and-socket joint used in connecting parts requiring restricted angular movement, said joint comprising:
- (a) a spherical pin (01) with a first end disposed within a bearing assembly (02, 03) said bearing assembly (02, 03) being disposed within an outer case (04); and
- (b) said bearing assembly (02, 03) comprising first (03) and second (02) bearings; and
- (c) said first (03) and said second (02) bearings being comprised of elastomeric material;
- (d) said first end of said spherical pin (01) further comprising first (09) and second (10) hemispheres, said first hemisphere (09) having a larger diameter than said second hemisphere (10); and
- (e) said first (09) and second (10) hemispheres disposed within said first (03)

and second (02) bearings; and

(f) said first hemisphere (09) directly contacting said first bearing (03), and
said second hemisphere (10) directly contacting said second bearing (02);
and

5 (g) said second (02) bearings contacting a flat portion of said first hemisphere
(09), and said second bearing contacting an arcuate portion of said second
hemispheres (10) such that said spherical pin (01) is continuously urged to
return to a pre-determined position;

(h) a sealing cover (05) directly contacting said second bearing (02), said
10 sealing cover (05) sealing said outer case (04).